



# RG 1000BASE Series Optical Modules



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## Product Pictures



## Product Overview

As an industry-leading ICT infrastructure and industry solution provider, Ruijie offers customers a wide variety of high-density and low-power 1G optical modules. They are applicable to data center and campus networks, enabling cost-effective, efficient, and high-speed interconnection among switches, routers, servers, and network interface controllers (NICs).

### MINI-GBIC-SX-MM850 Module

The MINI-GBIC-SX-MM850 is aligned to IEEE 1000BASE-SR optical specifications and supports a link length of up to 550 meters over a multimode fiber (MMF) with an LC connector. It adopts the SFP form factor and operates at a wavelength of 850 nm. The transceiver conforms to IEEE 802.3, SFF-8472, SFF-8431, SFF-8432, SFP+ Multisource Agreement (MSA), and RoHS standards.

### MINI-GBIC-LX-SM1310 Module

The MINI-GBIC-LX-SM1310 is aligned to IEEE 1000BASE-LX optical specifications and supports a link length of up to 10 kilometers over a single-mode fiber (SMF) with an LC connector. It adopts the SFP form factor and operates at a wavelength of 1310 nm. The transceiver conforms to IEEE 802.3, SFF-8472, SFF-8431, SFF-8432, SFP+ MSA, and RoHS standards.

### MINI-GBIC-GT Module

The MINI-GBIC-GT is an IEEE 1000base-X to 1000base-T media converter and supports a link length of up to 100 meters over a Cat 5e/6/6a cable with an RJ45 connector. It adopts the SFP form factor. The port needs to be configured with auto-negotiation. The transceiver conforms to IEEE 802.3ab, SFP+ MSA, and RoHS standards.

## **MINI-GBIC-LH40-SM1310 Module**

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The MINI-GBIC-LH40-SM1310 is aligned to IEEE 1000BASE-LH optical specifications and supports a link length of up to 40 kilometers over an SMF with an LC connector. It adopts the SFP form factor and operates at a wavelength of 1310 nm. The transceiver conforms to IEEE 802.3, SFF-8472, SFF-8431, SFF-8432, SFP+ MSA, and RoHS standards.

## **MINI-GBIC-ZX80-SM1550 Module**

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The MINI-GBIC-ZX80-SM1550 is aligned to IEEE 1000BASE-ZX optical specifications and supports a link length of up to 80 kilometers over an SMF with an LC connector. It adopts the SFP form factor and operates at a wavelength of 1550 nm. The transceiver conforms to the IEEE 802.3, SFF-8472, SFF-8431, SFF-8432, SFP+ MSA, and RoHS standards.

## **GE-SFP-LX20-SM1310-BIDI Module**

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The GE-SFP-LX20-SM1310-BIDI is aligned to IEEE 1000BASE-LX optical specifications and supports a link length of up to 20 kilometers over an SMF with a BIDI LC connector. It adopts the SFP form factor and operates at a wavelength of 1310 nm. The transceiver conforms to the IEEE 802.3, SFF-8472, SFF-8431, SFF-8432, SFP+ MSA, and RoHS standards.

## **GE-SFP-LX20-SM1550-BIDI Module**

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The GE-SFP-LX20-SM1550-BIDI is aligned to IEEE 1000BASE-LX optical specifications and supports a link length of up to 20 kilometers over an SMF with a BIDI LC connector. It adopts the SFP form factor and operates at a wavelength of 1550 nm. The transceiver is compliant to IEEE 802.3, SFF-8472, SFF-8431, SFF-8432, SFP+ MSA, and RoHS standards.

## **GE-SFP-LH40-SM1310-BIDI Module**

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The GE-SFP-LH40-SM1310-BIDI is aligned to IEEE 1000BASE-LH optical specifications and supports a link length of up to 40 kilometers over an SMF with a BIDI LC connector. It adopts the SFP form factor and operates at a wavelength of 1310 nm. The transceiver conforms to IEEE 802.3, SFF-8472, SFF-8431, SFF-8432, SFP+ MSA, and RoHS standards.

## **GE-SFP-LH40-SM1550-BIDI Module**

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The GE-SFP-LH40-SM1550-BIDI is aligned to IEEE 1000BASE-LH optical specifications and supports a link length of up to 40 kilometers over an SMF with a BIDI LC connector. It adopts the SFP form factor and operates at a wavelength of 1550 nm. The transceiver conforms to IEEE 802.3, SFF-8472, SFF-8431, SFF-8432, SFP+ MSA, and RoHS standards.

## **GE-SFP-LX03-SM1310-BIDI-I Module**

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The GE-SFP-LX03-SM1310-BIDI-I is aligned to IEEE 1000BASE-LX optical specifications and supports a link length of up to 3 kilometers over an SMF with a BIDI LC connector. It adopts the SFP form factor and operates at a wavelength of 1310 nm. The transceiver conforms to IEEE 802.3, SFF-8472, SFF-8431, SFF-8432, SFP+ MSA, and RoHS standards.

## **GE-SFP-LX03-SM1550-BIDI-I Module**

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The GE-SFP-LX03-SM1550-BIDI-I is aligned to IEEE 1000BASE-LX optical specifications and supports a link length of up to 3 kilometers over an SMF with a BIDI LC connector. It adopts the SFP form factor and operates at a wavelength of 1550 nm. The transceiver conforms to IEEE 802.3, SFF-8472, SFF-8431, SFF-8432, SFP+ MSA, and RoHS standards.

# Product Features

- Hot swapping, allowing for simplified maintenance
- High reliability and low power consumption, allowing for prolonged service life
- Compliance with RoHS standards

# Product Specifications

## MINI-GBIC Series Module Specifications

Model	MINI-GBIC-SX-MM850	MINI-GBIC-LX-SM1310	MINI-GBIC-LH40-SM1310	MINI-GBIC-ZX80-SM1550	MINI-GBIC-GT
Data rate	1.25 Gbps				1000base-X to 1000base-T
Form factor	SFP				
Connector type	Duplex LC	Duplex LC	Duplex LC	Duplex LC	RJ45
Cable type	MMF	SMF	SMF	SMF	Cat 5e/6/6a
Fiber end face finish type	Ultra Physical Contact (UPC)				N/A
Transmitter type	VCSEL	DFB	DFB	DFB	N/A
Receiver type	PIN				N/A
Reach	550 m (1,804.46 ft.)	10 km (32,808.40 ft.)	40 km (131,233.60 ft.)	80 km (262,467.19 ft.)	100 m (328.08 ft.)
Bit error ratio (BER)	1.00E-12				N/A
Data diagnosis-capable (DDM/DOM)	Yes				No
Power consumption	≤ 1.5 W				
Transmitter Optical Parameters					
Wavelength (nm)	850	1310	1310	1550	N/A
Max. transmit power (AVG)	0 dBm	-3 dBm	0 dBm	5 dBm	N/A

Model	MINI-GBIC-SX-MM850	MINI-GBIC-LX-SM1310	MINI-GBIC-LH40-SM1310	MINI-GBIC-ZX80-SM1550	MINI-GBIC-GT
Min. transmit power (AVG)	-9.5 dBm	-11 dBm	-5 dBm	0 dBm	N/A
Min. extinction ratio	≥ 9 dB				N/A
Receiver Optical Parameters					
Receive sensitivity (OMA)	< -17 dBm	< -19 dBm	< -23 dBm	< -27 dBm	N/A
Overload optical power (AVG)	0 dBm	-3 dBm	-3 dBm	-3 dBm	N/A
Environment and Reliability					
Operating temperature	0°C to 70°C (32°F to 158°F)				
Operating humidity	10% RH to 90% RH				
Storage temperature	-40°C to +85°C (-40°F to +185°F)				
Storage humidity	10% RH to 90% RH				
Dimensions and Weight					
Dimensions (W x D x H)	56.5 mm x 13.5 mm x 8.5mm (2.22 in. x 0.53 in. x 0.33 in.)		68 mm x 14 mm x 8.5 mm (2.68 in. x 0.55 in. x 0.33 in.)	56.5 mm x 13.5 mm x 8.5 mm (2.22 in. x 0.53 in. x 0.33 in.)	
Weight	35 g (0.08 lbs.)				

## Single-Fiber SFP Series Module (BIDI) Specifications

Model	GE-SFP-LH40-SM1310-BIDI	GE-SFP-LH40-SM1550-BIDI	GE-SFP-LX20-SM1310-BIDI	GE-SFP-LX20-SM1550-BIDI	GE-SFP-LX03-SM1310-BIDI-I	GE-SFP-LX03-SM1550-BIDI-I
Data rate	1.25 Gbps					
Form factor	SFP					
Connector type	BIDI LC					
Cable type	SMF					
Fiber end face finish type	Ultra Physical Contact (UPC)					

Model	GE-SFP-LH40-SM1310-BIDI	GE-SFP-LH40-SM1550-BIDI	GE-SFP-LX20-SM1310-BIDI	GE-SFP-LX20-SM1550-BIDI	GE-SFP-LX03-SM1310-BIDI-I	GE-SFP-LX03-SM1550-BIDI-I
Transmitter type	DFB	DFB	FP	DFB	FP	DFB
Receiver type	PIN					
Reach	40 km (131,233.60 ft.)		20 km (65,616.80 ft.)		3 km (9,842.52 ft.)	
Bit error ratio (BER)	1.00E-12					
Data diagnosis-capable (DDM/DOM)	Yes					
Power consumption	≤ 1.5 W					
<b>Transmitter Optical Parameters</b>						
Wavelength	1310 nm TX 1550 nm RX	1550 nm TX 1310 nm RX	1310 nm TX 1550 nm RX	1550 nm TX 1310 nm RX	1310 nm TX 1550 nm RX	1550 nm TX 1310 nm RX
Max. transmit power (AVG)	0 dBm		-3 dBm			
Min. transmit power (AVG)	-5 dBm		-9 dBm			
Min. extinction ratio	≥ 9 dB					
<b>Receiver Optical Parameters</b>						
Receive sensitivity (OMA)	< -23 dBm		< -20 dBm		< -22 dBm	
Overload optical power (AVG)	-3 dBm					
<b>Environment and Reliability</b>						
Operating temperature	0°C to 70°C (32°F to 158°F)					
Operating humidity	5% RH to 95% RH					
Storage temperature	-40°C to +85°C (-40°F to +185°F)					
Storage humidity	5% RH to 95% RH					
<b>Dimensions and Weight</b>						
Dimensions (W x D x H)	56.5 mm x 13.5 mm x 8.5mm (2.22 in. x 0.53 in. x 0.33 in.)					

Model	GE-SFP-LH40-SM1310-BIDI	GE-SFP-LH40-SM1550-BIDI	GE-SFP-LX20-SM1310-BIDI	GE-SFP-LX20-SM1550-BIDI	GE-SFP-LX03-SM1310-BIDI-I	GE-SFP-LX03-SM1550-BIDI-I
Weight	35 g (0.08 lbs.)					

## Ordering Information

Model	Description
MINI-GBIC-SX-MM850	1G SR module, SFP form factor, LC, 550 m (1,804.46 ft.) over MMF
MINI-GBIC-LX-SM1310	1G LX module, SFP form factor, LC, 10 km (32,808.40 ft.) over SMF
Mini-GBIC-GT	1G SFP copper module, SFP form factor, RJ45, 100 m (328.08 ft.) over Cat 5e/6/6a
MINI-GBIC-LH40-SM1310	1G LH module, SFP form factor, LC, 40 km (131,233.60 ft.) over SMF
MINI-GBIC-ZX80-SM1550	1G ZX module, SFP form factor, LC, 80 km (262,467.19 ft.) over SMF
GE-SFP-LX20-SM1310-BIDI	1G LX module, SFP form factor, BIDI LC, 20 km (65,616.80 ft.) over SMF
GE-SFP-LX20-SM1550-BIDI	1G LX module, SFP form factor, BIDI LC, 20 km (65,616.80 ft.) over SMF
GE-SFP-LH40-SM1310-BIDI	1G LH module, SFP form factor, BIDI LC, 40 km (131,233.60 ft.) over SMF
GE-SFP-LH40-SM1550-BIDI	1G LH module, SFP form factor, BIDI LC, 40 km (32,808.40 ft.) over SMF
GE-SFP-LX03-SM1310-BIDI-I	1G BIDI module-TX1310/RX1550-industrial class, SFP form factor, BIDI LC, 3 km (9,842.52 ft.)
GE-SFP-LX03-SM1550-BIDI-I	1G BIDI module-TX1550/RX1310-industrial class, SFP form factor, BIDI LC, 3 km (9,842.52 ft.)

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